

CLAIMS

1. A wearable receiver comprising:

a receiving unit that includes a demodulating unit that receives a reception radio wave in a frequency modulation multiplex telecasting and that demodulates the reception radio wave to output;

a display unit that displays text information output by the demodulating unit;

an antenna for receiving and transmitting a frequency in the frequency modulation band; and

a base plate that accommodates the receiving unit, the display unit, and the antenna, and that is structured to be worn on an arm, wherein

the antenna includes

a magnetic member, and

an antenna copper plate arranged on a periphery of the magnetic member so that the antenna copper plate wraps nearly one around the magnetic member.

2. The wearable receiver according to claim 1, wherein the antenna is arranged on the base plate at a position excluding positions at which the receiving unit and the display unit are arranged.

3. The wearable receiver according to claim 1, wherein an opening hole for letting the reception radio wave pass through with respect to the antenna is arranged by forming an opening at the position at which the antenna is arranged on the base plate.

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4. The wearable receiver according to claim 1, wherein the magnetic member has an inclined portion that is formed corresponding to a shape of the base plate by cutting off a

portion of the periphery on which the antenna copper plate is wrapped.

5. The wearable receiver according to claim 1, wherein
5 the magnetic member has an arc-shaped portion having a predetermined diameter, corresponding to a shape of the base plate, on the periphery on which the antenna copper plate is wrapped.

10 6. A wearable transmitter comprising:
a transmitting unit that includes a modulating unit that modulates a transmissive radio wave in a frequency modulation band to output;
an antenna for transmitting a frequency in the
15 frequency modulation band; and
a base plate that accommodates the transmitting unit, and the antenna, and that is structured to be worn on an arm, wherein
the antenna includes
20 a magnetic member, and
an antenna copper plate arranged on a periphery of the magnetic member so that the antenna copper plate wraps nearly one around the magnetic member.

25 7. A wearable transmitter/receiver comprising:
a receiving unit that includes a demodulating unit that receives a reception radio wave in a frequency modulation multiplex telecasting and that demodulates the reception radio wave to output;
30 a transmitting unit that includes a modulating unit that modulates a transmissive radio wave in the frequency modulation band to output;
a display unit that displays text information output

by the demodulating unit;

an antenna for receiving and transmitting a frequency in the frequency modulation band; and

a base plate that accommodates the receiving unit, the transmitting unit, the display unit, and the antenna, and
5 that is structured to be worn on an arm, wherein

the antenna includes

a magnetic member, and

an antenna copper plate arranged on a periphery
10 of the magnetic member so that the antenna copper plate wraps nearly one around the magnetic member.

8. An antenna comprising:

a magnetic member, and

15 an antenna copper plate that is arranged on a periphery of the magnetic member so that the antenna copper plate wraps nearly one around the magnetic member.

9. An antenna for receiving a frequency in a frequency
20 modulation band, the antenna comprising:

a magnetic member that is in a substantially parallelepiped shape having a predetermined length, width, and height; and

an antenna copper plate that is arranged on a
25 periphery of the magnetic member, the periphery that continues in a direction of the length and the width, so that the antenna copper plate wraps nearly one around the magnetic member, and that has a height of a predetermined ratio to the height of the magnetic member.

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10. The antenna according to claim 9, wherein the magnetic member has an inclined portion formed by cutting off a portion of the periphery on which the antenna copper plate

is wrapped.

11. The antenna according to claim 9, wherein the magnetic member has an arc-shaped portion having a predetermined
5 diameter on the periphery on which the antenna copper plate is wrapped.

12. The antenna according to claim 9, wherein the height
10 of the antenna copper plate is equal to the height of the magnetic member.

13. The antenna according to claim 9, wherein the height
of the antenna copper plate is smaller than the height of
the magnetic member.

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14. The antenna according to claim 9, wherein the height
of the antenna copper plate is larger than the height of
the magnetic member.

20 15. The antenna according to claim 9, wherein the ratio of
the height of the magnetic member to the height of the
antenna copper plate is from 1 to 2.

25 16. The antenna according to claim 15, wherein the ratio
of the height of the magnetic member to the height of the
antenna copper plate is from 1.2 to 1.3.

17. The antenna according to claim 9, wherein the magnetic
material is formed with a material of which a magnetic
30 permeability μ_1 is 20 or lower and a magnetic permeability
 μ_2 is 0.03 or lower at a frequency in the frequency
modulation band.

18. The antenna according to claim 9, wherein main components of the magnetic material are iron oxide (Fe_2O_3) and nickel oxide (NiO).

5 19. A receiver comprising:

a magnetic member;

an antenna copper plate that is arranged on a periphery of the magnetic member so that the antenna copper plate wraps nearly one around the magnetic member; and

10 a receiving unit that is connected to antenna terminals of the antenna.

20. A receiver that receives a frequency in a frequency modulation band, the receiver comprising:

15 a magnetic member that is in a substantially parallelepiped shape having a predetermined length, width, and height;

an antenna copper plate that is arranged on a periphery of the magnetic member, the periphery that
20 continues in a direction of the length and the width, so that the antenna copper plate wraps nearly one around the magnetic member, and that has a height of a predetermined ratio to the height of the magnetic member; and

a receiving unit that is connected to antenna
25 terminals of the antenna.

21. The receiver according to claim 20, wherein the height of the antenna copper plate is equal to the height of the magnetic member.

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22. The antenna according to claim 20, wherein the height of the antenna copper plate is smaller than the height of the magnetic member.

23. The receiver according to claim 20, wherein
the antenna is directly connected to a circuit
substrate of the receiving unit, and is arranged so that
5 magnetic fluxes passing through the antenna do not pass
through the circuit substrate.

24. The receiver according to 20, wherein
the receiving unit includes
10 a demodulating unit that receives a reception
radio wave of a frequency modulation multiplex telecasting
and that demodulates the reception radio wave to output,
and
a display unit that displays text information
15 output by the demodulating unit.

25. A transmitter comprising:
a transmitting unit that includes a modulating unit
that modulates a transmissive radio wave in a frequency
20 modulation band to output; and
an antenna for transmitting a frequency in the
frequency modulation band, wherein
the antenna includes
a magnetic member, and
25 an antenna copper plate arranged on a periphery
of the magnetic member so that the antenna copper plate
wraps nearly one around the magnetic member.

26. A transmitter/receiver comprising:
30 a receiving unit that includes a demodulating unit
that receives a reception radio wave in a frequency
modulation multiplex telecasting and that demodulates the
reception radio wave to output;

a transmitting unit that includes a modulating unit that modulates a transmissive radio wave in the frequency modulation band to output;

5 a display unit that displays text information output by the demodulating unit; and

an antenna for receiving and transmitting a frequency in the frequency modulation band; wherein

the antenna includes

a magnetic member, and

10 an antenna copper plate arranged on a periphery of the magnetic member so that the antenna copper plate wraps nearly one around the magnetic member.